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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/269,501	03/29/1999	YUICHI AKIBA	990345	1114

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

6m

Office Action Summary	Application No.	Applicant(s)	
	09/269,501	AKIBA, YUICHI	
	Examiner	Art Unit	
	Timothy L. Rude	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 February 2005 has been entered.

Claims

1. Claims 1 and 23 are amended.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5-7, 9-12, 17, 18, and 23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk et al, USPAT 6124971 (Ouderkirk) in view of Sonoda et al (Sonoda) USPAT 5,880,796.

As to Claims 1, 2, and 23, Ouderkirk discloses in Figure 8 (col. 13, lines 14-51) an in claims 1, 2 and 8, (columns 16 and 17) all of the elements of claims 1, 2, and 23, (see also Figure 13 and col. 15, lines 37-63, wherein the reflection is "mirror-like") except the color filter disposed on the visible side of the absorption-type polarizing film, or between the absorption-type polarizing film and the reflection-type polarizing film, and wherein substantially all the light falling on the reflection-type polarizing film is reflected by the reflection-type polarizing film and is outgoing to the visible side, in one region for displaying of the information [ray 42] and a region for displaying the background [ray 43].

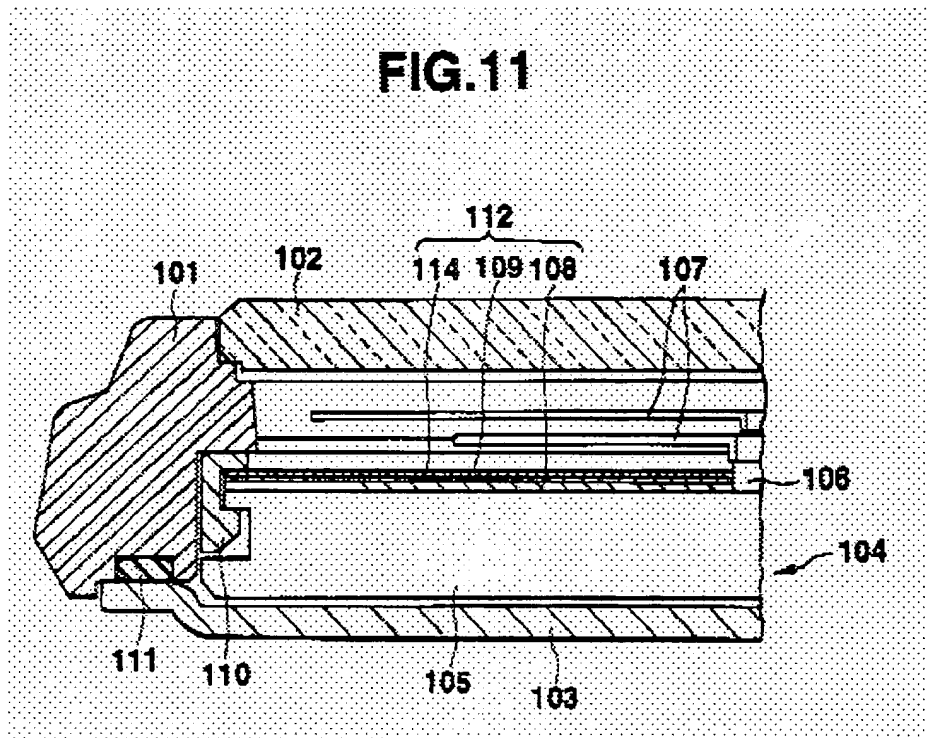
Applicant's added recitations as to display characters and background display in the non-voltage applied area are long-standing intended use limitations well known in the art at the time the claimed invention was made; digital watches with numeral type displays have obviously been in production for decades.

Please note Applicant originally presented the species wherein: 1) the color filter is disposed on the visible side of the absorption-type polarizing film, or 2) the color filter is disposed between the absorption-type polarizing film and the reflection-type polarizing film, 3) the color filter is disposed between the liquid crystal cell and the reflection-type polarizing film, 4) the color filter is disposed between one of the transparent substrates and the liquid crystal layer, as being interchangeable species sufficient to comprise Applicant's claimed invention. Therefore restriction is not required. Examiner considers said species to be not patentably distinct (MPEP

808.01(a)); they are grouped together and considered unpatentable over each other.

Furthermore, it is respectfully pointed out that a wide range of such color filter locations is taught in numerous text books on LCD display technology at the time the claimed invention was made. Please also note that the location of the color filter (assumed to be polarization preserving per Applicant's enabling disclosure and Ouderkirk) would not interfere with the claimed - substantially all the light falling on the reflection-type polarizing film is reflected by the reflection-type polarizing film and is outgoing to the visible side, in one region for displaying of the information and a region for displaying the background.

Sonoda teaches numerous displays including LCD watch displays, and in Figure 11 Sonoda teaches that a color film, 114 (Applicant's color filter), may be disposed on the visible side of a display (Applicant's visible side of the reflection-type polarizing film, not patentably distinct from Applicant's disposed between the absorption-type polarizing film and the reflection-type polarizing film) to provide a color metallic impression to improve a tastefulness and to increase a product value (col. 8, lines 36 through 56).



Sonoda is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a color filter disposed on the visible side of the reflection-type polarizing film to provide a color metallic impression to improve a tastefulness and to increase a product value regardless of the display type, e.g., mechanical, LCD, electrochromic, etc.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Ouderkirk with the color filter disposed on the visible side of the reflection-type polarizing film to provide a color metallic impression to improve a tastefulness and to increase a product value.

As to Claim 5, Ouderkirk discloses a backlight in claim 19.

As to Claim 6, Ouderkirk discloses a translucent film (absorbing element) in claim 26.

As to Claim 7, Ouderkirk discloses an absorption-type polarizing film in claim 30.

As to Claim 9, Ouderkirk discloses a translucent film (absorbing element) in claim 26.

As to Claim 10, Ouderkirk discloses an absorption-type polarizing film in claim 30.

As to Claim 11, Ouderkirk discloses alternate polarizer alignments in claims 20, 21, and 22.

As to Claim 12, Ouderkirk discloses alternate polarizer alignments in claims 20, 21, and 22.

As to Claim 17, Ouderkirk discloses the use of a dichroic polarizer positioned between the absorption-type polarizing film and the reflection-type polarizing film in claim 31, also column 5, lines 32 – 67 and column 6, lines 1 - 56.

As to Claim 18, Ouderkirk discloses the use of multi-layered dielectric coatings capable of reflecting a light component of incoming light, and having a specified wavelength, while transmitting light components of the incoming light at other wavelengths in column 5, lines 3 – 31.

3. Claims 13-16 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Sonoda, as applied to claims above, and further in view of Liquid Crystals, Applications and Uses, Volume 1, by Birendra Bahadur et al (Bahadur) 1990, (Chapters 7 and 10, especially pages 180, 242, 245, and 270).

As to Claims 13-16 and 20-22, Ouderkirk in view of Sonoda disclose the device above.

Ouderkirk in view of Sonoda do not disclose the specific color filter arrangements as claimed.

Bahadur (Chapters 7 and 10, especially pages 180, 242, 245, and 270) discloses the longstanding and conventional use of planar arrays of red, green, and blue color filters as well as the use of cyan, magenta, and yellow color filters arranged in a given order repeatedly and regularly anywhere in the beam path to comprise color effects for a wide variety of LCD displays.

4. Claims 3, 4, 8, and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Sonoda as applied to claims above, and further in view of Hisatake et al, USPAT 5731858 (Hisatake).

As to Claims 3, 4, and 8, Ouderkirk discloses the display above wherein (col. 17, lines 9-11) the use of a light absorption film, 33, disposed on the reflection-type polarizing film, 8, opposite from the visible side thereof (Figure 8).

Ouderkirk in view of Sonoda does not disclose the use of a light scattering film on the visible side of the absorption-type polarizing film.

Hisatake teaches the use of a light scattering film on the visible side of the absorption-type polarizing film, (Figure 26, column 33, lines 40 – 49).

Hisatake is evidence that ordinary workers in the art would recognize the benefit of a light scattering film on the visible side of the absorption-type polarizing film.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Ouderkirk in view of Sonoda with the light scattering film of Hisatake to improve viewing angle.

As to Claim 19, Ouderkirk in view of Sonoda disclose the display above.

Ouderkirk in view of Sonoda does not disclose liquid crystal type.

Hisatake discloses the use of a twisted nematic liquid crystal (claim 19, also column 7, lines 48 – 50) to comprise a display with good contrast ratio.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Ouderkirk in view of Sonoda with the twisted nematic liquid crystal of Hisatake to achieve good contrast ratio.

Response to Arguments

Applicant's arguments filed on 18 February 2005 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are as follows:

(1) The reflective polarizer of the claimed invention provides nearly 100 percent reflection.

(2) The display of Ouderkirk is diffuse as opposed to a reflection-type polarizer with a specular reflection characteristic.

(3) Ouderkirk in view of Sonoda does not disclose the claimed color display because Sonoda teaches a color background in a non-LCD display.

(4) Dependent claims are allowable because they directly or indirectly depend from an allowable base claim.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that the structure of Ouderkirk meets the structure of Applicant's enabling disclosure and would therefore perform with nearly 100 percent reflection by the reflective polarizer.

(2) It is respectfully pointed out that the additional diffuser of Ouderkirk was not relied upon in the rejection. Furthermore, Applicant's claims are presently in comprising format and thereby do not preclude the additional structure that would render a diffuse display. It is also respectfully pointed out that Ouderkirk discloses a reflection-type polarizer without specifying diffuse reflection, therefore the polarizer of Ouderkirk is considered to have the default specular reflection characteristic. Furthermore, the design of Ouderkirk uses a dedicated diffuser layer which would be unnecessary if the polarizer of Ouderkirk were diffusive. Examiner considers the disclosure of Ouderkirk in view of Sonoda to render the use of a reflection-type polarizer with a specular reflection characteristic obvious to one of ordinary skill in the art of liquid crystals at the time the claimed invention was made per rejections above. Also, Ouderkirk discloses the diffuser is optional; please see Figure 13 and col. 15, lines 37-63, wherein the reflection is "mirror-like", thereby confirming specular reflection.

(3) It is respectfully pointed out that Sonoda is applied to teach a color display with motivation to combine per rejections above. Sonoda teaches that a light transmissive color film may be used over the mirror-like surface [Applicant's reflective polarizer] to achieve a colored metallic impression. Sonoda also teaches that his display may also be an LCD watch [fifth embodiment]. Examiner considers this to

Art Unit: 2883

render the coloration aspect of Applicant's claimed invention very obvious to one of ordinary skill at the time the claimed invention was made, especially since it matches Applicant's motivation of decorative appearance in a watch. Please note that one of ordinary skill would certainly know where to put a color film in order to achieve the desired coloration based upon the teachings of Sonoda for a wide variety of display types, including LCDs.

(4) It is respectfully pointed out that in so far as Applicant has not argued rejection(s) of the limitations of dependent claim(s), Applicant has acquiesced said rejection(s).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L. Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2883

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Timothy L Rude
Examiner
Art Unit 2883



tlr